The Journal of Extension

Volume 61 | Number 2 Article 17

9-26-2023

Revisiting the Master Food Volunteer Program: Examining how to enhance nutrition education in the United States

Stacey Viera
Virginia Cooperative Extension, staceyviera@gwu.edu

Lindsey Haynes-Maslow
The University of North Carolina at Chapel Hill, lhmaslow@ncsu.edu

Recommended Citation

Viera, S., & Haynes-Maslow, L. (2023). Revisiting the Master Food Volunteer Program: Examining how to enhance nutrition education in the United States. *The Journal of Extension, 61*(2), Article 17. https://doi.org/10.34068/joe.61.02.17

This Research in Brief is brought to you for free and open access by the Conferences at TigerPrints. It has been accepted for inclusion in The Journal of Extension by an authorized editor of TigerPrints. For more information, please contact kokeefe@clemson.edu.

Revisiting the Master Food Volunteer Program: Examining how to enhance nutrition education in the United States

Cover Page Footnote

We gratefully acknowledge the contributions of Melissa Chase, PhD, MS and Anne Effland, PhD, MA.

JOURNAL OF Extension

Research in Brief

Volume 61, Issue 2, 2023

Revisiting the Master Food Volunteer Program: Examining How to Enhance Nutrition Education in the United States

Stacey Viera[1] and Lindsey Haynes-Maslow[2]

AUTHORS: [1]Virginia Cooperative Extension. [2]University of North Carolina at Chapel Hill.

Abstract. America's diet-related illness crisis intersects with a lack of nutrition literacy, nutrition security, and systemic inequities. The Cooperative Extension Service's (CES) national infrastructure could potentially provide equitable access to quality nutrition education in the US utilizing a Master Food Volunteer (MFV) model. This research brief examined preliminary evidence for the MFV model as a support for CES agents and paraprofessionals, and results show a paucity of evidence. Further research and a pilot program with pre-established measures for health-related knowledge and behaviors could elucidate the model's potential to increase equitable access to evidence-based programming, nutrition, and implementation guidance.

INTRODUCTION

Cooperative Extension Service (Extension) is a network of U.S. land-grant university Extension professionals who translate evidence-based research into practical applications through partnerships at the state and local levels. There are Extension offices in or near almost all 3,000 counties across the United States (National Institute of Food and Agriculture, n.d.). Extension' Family and Consumer Sciences (FCS) infrastructure includes the Master Food Volunteer (MFV) program and has a long history of research and educational activities that support health literacy (Nickols et al., 2009).

The MFV program, based on social cognitive theory (Bandura, 2004), debuted in 2002 at Kansas State University (K-State). Social cognitive theory emphasizes the importance of modeling behavior and how observing these behaviors influences individuals, their behaviors, and the environments in which they live (Bandura, 1989). Additionally, individuals' perceptions of their own self-efficacy can have combined effects on diet and health. Since the MFV model began in 2002, its reach has expanded to the University of Delaware, University of Maine, North Carolina State University, University of Rhode Island, University of Tennessee, Texas A&M, Virginia Tech, and others thanks to Extension agents.

To the authors' knowledge, there is no federal funding provided specifically for the MFV program. Extension agents and specialists must seek additional funding sources to support program costs. MFVs help educate—and sometimes provide healthy food supplies to—food assistance program recipients, others in underserved populations, and the general public (Portsmouth, VIrginia, 2022; Miles, 2018). Volunteers earn the MFV credential through a training program in nutrition science, cooking techniques, proper food handling, and presentation skills to prepare them to lead dynamic nutrition education and cooking demonstrations with an emphasis on food safety (Virginia Cooperative Extension, n.d.).

Currently, there is a dearth of peer-reviewed literature centered on the MFV program and its impacts. The purpose of this research brief is to discuss preliminary evidence for the MFV model by compiling information from various sectors and with related program components. The programs we highlight operate similarly to the original MFV program, and this brief explains how further evaluation could lay the groundwork for a national strategy, led by Extension, that would implement robust nutrition education and promote health literacy throughout the United States.

METHODS

In our initial scoping searches of the peer-reviewed literature, we discovered a scarcity of evidence of the effectiveness of the MFV model. With that lack in mind, we conducted a five-stage scoping review (Arksey & O'Malley, 2005) to gather information about the types, depth, and breadth of literature available regarding MFV-style models and to identify the gaps in the research. The five stages include: identifying

the research question; identifying relevant studies; selecting studies; charting the data; and collating, summarizing, and reporting results.

FIVE-STAGE SCOPING REVIEW

In stage 1 of our review, we identified our research question: What is the existing body of research examining Extension Food and Wellness Volunteer-style programs? Then, in stage 2, we identified relevant literature through a review of peer-reviewed studies using Google Scholar, university websites/programs, Internet searches, and grey literature (e.g., white papers). Search terms in our strategy included: a) master food volunteer; b) master wellness volunteer, c) Extension food volunteer, d) master volunteer, e) food safety volunteer, and f) Extension volunteer. Some of the search terms, like our research question, were intentionally broad to allow us to cast a wide net and then narrow down relevant results to review.

In the third stage, study selection, we used Microsoft Excel to compile a list of the studies identified in our searches. Of the more than 24,000 results sorted by relevance in both Google Scholar and our other searches, we reviewed the first 500 titles and/or abstracts for relevance and then reviewed the full text of 27 articles. Specific mention of an Extension Wellness or MFV-style volunteer program warranted inclusion in the review. We excluded all other studies. Ultimately, both authors agreed to include seven studies and reports in the final analysis. We excluded at least one article that appeared to be a small survey and charted our data in Table 1 as stipulated by scoping review guidelines for stage 4.

The fifth and final stage of the review is collating, summarizing, and reporting the results. Table 2 is a compilation of MFV programs added to complement results and document programs for which evaluation may or may not be available.

RESULTS

MASTER FOOD VOLUNTEER PROGRAM LOGISTICS

Among the seven studies reviewed for this brief, program logistics and practices for training volunteers vary by state. However, some MFV trainees pay a fee for materials (Virginia Cooperative Extension, n.d.). They also receive approximately 30 hours of training from state Extension agents, Extension specialists, and guest experts on food safety, food preparation, nutrition science, Dietary Guidelines for Americans, cooking and knife skills, and presentation techniques. Upon completing the course, volunteers who pass a final exam graduate from the program and reciprocate the investment Extension made in their education with equivalent volunteer hours in their community. Volunteer opportunities are often at congregate meal sites, senior centers, farmers markets, public schools, libraries, food pantries, and other locations, including online classes. Table 2 shows additional data regarding the specific training domains and purview for each program.

VOLUNTEER SELF-EFFICACY OF HEALTH-RELATED ISSUES

Since these programs are volunteer-based, it's important to recognize the necessity of having volunteers prepared to teach health-related materials. To better understand self-efficacy of volunteers after their training, the University of Arkansas studied newly recruited volunteers for their Extension Wellness Ambassador Program at baseline (pre-training) and three months post-training. Extension Wellness Ambassadors received 40 hours of training and education in nutrition, physical activity, and other health-related topics such as mental health and chronic disease. Researchers measured 57 participants' own self-efficacy for eating healthy and participating in physical activity. After three months, Extension Wellness Ambassadors showed statistically significant improvement in self-efficacy for healthy eating ($p<0.01$) and physical activity ($p<0.01$) (Washburn et al., 2017).

VOLUNTEER REACH AND IMPACT

In Kansas, researchers tracked their MFV interactions and showed that in one year, they made contact with more than 3,600 Kansans of various age groups (K-State Research and Extension, 2020). As in Kansas, Virginia Tech MFVs record the number of participants and their demographics at events. According to the Virginia MFV program's state coordinator, there are now 99,294 volunteers in Virginia.

Maine's Eat Well Volunteer (EWV) initiative was a pilot of their food and nutrition education program held at food pantries in 2014 and 2015. This initiative focused on teaching food pantry clients about preparation skills and offering taste tests for seasonal produce over a four-month period each year. On average, five EWVs reached over 250 clients the first year and nearly 600 the following year. Among a survey distributed to 40 food pantry clients in 2015, six months after interacting with EWVs, researchers asked clients if interacting with EWVs helped them have more fresh foods, prepare healthier foods, feel healthier, better manage their diabetes or hypertension, and/or lose weight. Among the twelve participants who responded (30% response rate), 80% reported feeling they had more fresh food to eat; 70% said they were preparing healthier meals; 60% felt healthier; 30% had better control of their diabetes or hypertension; and 20% lost weight. However, we caution that the survey sample was small, and researchers should seek larger sample sizes for future surveys (Peronto & Yerxa, 2016).

In Mississippi, a doctoral dissertation examined the effects of a Junior Master Wellness Volunteer program on positive youth development outcomes, identified as: (a) connection and contribution, (b) character, (c) confidence, and (d) health literacy competence. Of the 93 participants aged

Table 1. Studies Included in Scoping Review

Author(s)	Title	Source	Summary
Jiles et al. (2019)	Developing a Master Food Volunteer Continuing Education Program: A Model for Volunteer Capacity Building	Journal of Extension	Two-phase pilot test development of continuing education program. Pre-post assessment measuring volunteers' changes in knowledge after 2 weeks. In phase 2, 9i=10. Intervention group showed an increase in knowledge, but results were not statistically significant.
Washburn et al. (2017)	Extension Wellness Ambassadors: Individual Effects of Participation in a Health-Focused Master Volunteer Program	Journal of Extension	3-month pre-post assessment measuring volunteers' changes in self-efficacy. N=57. Volunteers significantly improved their self-efficacy for healthy eating and physical activity.
Peronto and Yerxa (2016)	Eat Well Volunteers Program Takes Feeding the Hungry to a New Level	Journal of the National Association of County Agricultural Agents	6-month follow-up survey with food pantry clients on self-reported behaviors. N=12. More than half of respondents reported they felt healthier, had more fresh food to eat, and prepared healthier meals.
K-State Research and Extension (2020)	Making a Difference 2019a	K-State report	106 active volunteers reported 12,226 volunteer hours.
Bloom et al. (2021)	Lessons Learned from the Development of the North Carolina Extension Master Food Volunteer Program	Journal of Extension	Curriculum development totaled 660 hours with 42 agents and 110 volunteers contributing nearly 6,000 volunteer hours over 3 years. Authors report a nearly 1,000-fold return on investment.
Ware (2020)	Examining the Effectiveness of the Junior Master Wellness Volunteer Program on Positive Youth Development Outcomes	Thesis	Pre- and post-tests of positive youth outcomes of competence in health literacy, connection, contribution, character, and confidence as a result of program participation with majority African American study sample. N=93. Results were statistically significant.
DeNunzio (2022)	A feasibility assessment for the use of the community health worker model for inclusive garden-based food systems programming for Virginia Cooperative Extension	Thesis	Scoping review (N=43) and qualitative study (N=29) found Extension Master Gardeners and Master Food Volunteers could support a community health worker model, though diversity and inclusion are challenges.

[a]Results for subsequent years not reported due to non-standard operations during the Covid-19 pandemic.

14 to 18, 71.0% identified as African American and 91.4% female. The secondary analysis of Mississippi State University Extension research data found statistically significant improvement in all four outcomes associated with involvement in the Junior Master Wellness Volunteer program and a positive association between number of volunteer hours and improvements in connection and contribution, character, and confidence (Ware, 2020).

VALUE OF VOLUNTEER HOURS

According to K-State, MFVs in their community worked more than 12,000 volunteer hours—valued at over $285,000—in 2019 alone; K-State calculated this statistic with Independent Sector's Value of Volunteer Time hourly rate. These MFVs are equal to approximately 5.5 full-time equivalent employees (K-State Research and Extension, 2020). Additionally, according to the Virginia MFV program's state coordinator, volunteers have reciprocated a total of 40,446 hours. Based on MFV impacts, Cooperative Extension leaders in the Virginia Commonwealth have developed a continuing education program to enhance MFV-led outreach for diabetes self-management, further capitalizing on the capacity of volunteers to be agents of change in their communities (Jiles et al., 2019). North Carolina State University's MFV program,

modeled after Virginia Tech's, showed a 1,000-fold return on investment for the program when researchers calculated the investment in curriculum development, volunteer training, and program evaluation vis-à-vis the outputs of agents, volunteers, volunteer hours, and number of contacts reached (Bloom et al., 2021).

PROMOTING DIVERSITY, EQUITY, AND INCLUSION IN EXTENSION PROGRAMS

A Virginia Tech Master of Science thesis conducted a feasibility assessment for using the community health worker model to be more inclusive of Black, Indigenous, and people of color (BIPOC). The thesis suggested that Virginia Cooperative Extension's MFV model was one that could support the approach. Overall, there was a documented lack of diversity among all Virginia Extension volunteers, including MFVs. Through scoping reviews and qualitative interviews, the author concluded that garden-based programming led by community health workers—with support from volunteers such as MFVs—could address diversity, equity, and inclusion in Extension programs targeted at underserved populations (DeNunzio, 2022).

DISCUSSION

This research brief shares preliminary evidence for the effectiveness of the MFV model based on a scoping review of seven studies. While some of these studies do not focus specifically on the MFV program, they do discuss other programs that operate similarly to the original MFV model. These studies reported MFV program logistics, volunteer self-efficacy of health-related issues, volunteer reach and impact, the value of volunteer hours, and—in the case of one thesis— the importance of promoting diversity, equity, and inclusion in Extension programs. While the sample sizes of these studies are small, they do highlight important aspects of the MFV program and give suggestions on how to reach a broader audience (specifically one that is more inclusive of BIPOC communities).

Currently, the MFV model is aligned with several recommendations of the Extension Committee on Organization and Policy (ECOP) Task Force's "Extension's National Framework for Health Equity and Well-Being," adopted in July 2021 (ECOP Health Innovation Task Force, 2021). As explored below in the results section, the MFV model may provide opportunities to utilize a community development approach recommended by ECOP to implement evidence-based nutrition educational interventions tailored to individual community needs. We can assume that MFV program volunteers are from the same community that they will serve and can thus help build community connections, trust, and future community development (after both volunteers and participants complete the program). In this same way, the program could serve to create local opportunities for linking food and nutrition components of vocational agriculture education and broader service-learning programs. Leveraging the expertise of Extension volunteers and paraprofessionals in schools could help streamline efforts and strengthen ties between educational institutions and community-based Extension professionals (Harrington et al., 2021). In turn, these two strategies—utilizing a community development approach and partnering with educational institutions—could compliment or amplify state and federal investments in nutrition education.

LIMITATIONS

The MFV model is a place-based program that varies depending on the location and the target audience. Therefore, trying to evaluate the effectiveness, feasibility, and efficacy of each program is difficult due to the lack of uniformity between programs. Additionally, the training domains in Table 2 are broad and likely include overlapping content. The training domains in Table 2 are a starting point for future research into the details of each program listed or for other Extension programs seeking to create their own MFV program. While this paper is not a systematic review, we attempted to review the quality of the information provided in existing studies. Unfortunately, most studies had a small sample size, measured different outcomes, and lacked statistical significance. While the MFV model seems promising and addresses Extension priorities, the lack of existing literature remains a major limitation. Therefore, the recommendations listed below could guide the creation of a future opportunity to evaluate MFV model studies in a more rigorous systematic review.

RECOMMENDATIONS

To show proof of concept for the MFV model, researchers must create a pilot program with pre-established evaluation measures for health-related behaviors such as self-efficacy (in preparing healthier meals) and the ability to share new knowledge with others. This food-focused Extension volunteer strategy has spread in a grassroots fashion and is has been implemented in approximately 20 state institutions over the past two decades (see Table 2).

The next step for building evidence for behavioral health interventions could be collecting qualitative data through key informant interviews with Extension agents to help identify perceived and actual barriers for starting, implementing, and sustaining such a program. This data will help target and address the challenges of establishing a pilot program that enables and encourages Extension agents and state Extension directors to initiate an MFV program in their state among rural, suburban, and urban Extension agents (Powell et al., 2015). Researchers could investigate the logic models and

Table 2. Master Food Volunteer-Style Programs and Training Domains Listed by State and Institution

State	Program Name	Training Domains						Website	Institution
		Food Preservation	Food Safety	Food Resource Management	Health Equity	Nutrition & Healthy Eating	Physical Activity		
Arkansas	Extension Wellness Ambassador					x	x	https://www.uaex.uada.edu/life-skills-wellness/health/wellness-ambassador.aspx	University of Arkansas Extension
California	Master Food Preserver	x	x	x				https://mfp.ucanr.edu/	University of California, Division of Agriculture and Natural Resources
Colorado	Master Food Safety Advisor	x	x	x				https://elpaso.extension.colostate.edu/master-food-safety-advisor/#	Colorado State University Extension
Delaware	Master Food Educator Volunteer		x			x	x	https://www.udel.edu/academics/colleges/canr/cooperative-extension/nutrition-wellness/master-food-educators/	University of Delaware
Idaho	Master Food Safety Advisor	x	x	x				https://www.uidaho.edu/extension/county/cassia/family-consumer/master-food-safety	University of Idaho Extension
Kansas	Master Food Volunteer	x				x	x	https://www.ksre.k-state.edu/mfv/	Kansas State University Extension
Maine	Eat Well Volunteer		x	x		x		https://extension.umaine.edu/hancock/about/eat-well-volunteer/	University of Maine Extension
Nebraska	Master Health Volunteers				x	x	x	https://lancaster.unl.edu/wellconnectedcommunities/master-health-volunteers	Nebraska Extension
New Hampshire	Master Wellness Volunteer				x	x	x	https://extension.unh.edu/health-well-being/programs/master-wellness-volunteers	University of New Hampshire Extension
New Jersey	Master Food Preserver	x	x	x				https://njaes.rutgers.edu/food-safety/home-food-preservation/	Rutgers Cooperative Extension
North Carolina	Extension Master Food Volunteer	x	x	x	x	x		https://fcs.ces.ncsu.edu/master-food-volunteers/	North Carolina State University Extension

Table 2. (*continued*)

State	Program Name	Training Domains						Website	Institution
		Food Preservation	Food Safety	Food Resource Management	Health Equity	Nutrition & Healthy Eating	Physical Activity		
Oregon	Master Food Preserver	x	x	x				https://extension.oregonstate.edu/mfp/master-food-preserver-program	Oregon State University Extension
Rhode Island	Food Recovery for Rhode Island/ Food Recovery Volunteer	x	x	x		x		https://web.uri.edu/coopext/foodrecovery/	University of Rhode Island Extension
South Dakota	Master Food Preserver Volunteer	x	x	x				https://extension.sdstate.edu/master-food-preserver-volunteer-program	South Dakota State University Extension
Tennessee	Master Food Volunteer	x	x	x	x			https://rutherford.tennessee.edu/master-food-volunteer/	University of Tennessee Extension
Texas	Master Wellness Volunteer		x			x	x	https://agrilife.org/mwv/	Texas A&M AgriLife Extension
Utah	Master Food Preserver Volunteer	x	x	x				https://extension.usu.edu/preserve-the-harvest/master-food-preserver	Utah State University Extension
Utah	Master Health Volunteer					x	x	https://extension.usu.edu/healthwellness/healthequity/master-health-volunteer	Utah State University Extension
Virginia	Master Food Volunteer	x	x	x		x	x	https://ext.vt.edu/food-health/master-food-volunteer.html	Virginia Tech & Virginia State University

compare inputs, activities, outputs, and outcomes for existing MFV models in multiple states. Additionally, MFV program directors could identify the core components of their programs, work towards consistency across training and evaluation tools, and implement measures to show proof of concept for a potentially promising nutrition education program.

While food safety and nutrition education training are the cornerstones of the MFV model, we recommend testing program messaging and delivery with low-income and/or BIPOC audiences to gain additional insight into the appropriate messengers of nutrition education lessons to these audiences. To this end, program coordinators must conduct volunteer recruitment with equity as a core tenet.

Volunteers should not be considered a replacement for full-time Extension Agents, Supplemental Nutrition Assistance Program Education educators, Expanded Food and Nutrition Education Program educators, or other paraprofessionals or community health workers. We suggest that the MFV model could be used as a way to expand capacity and reach for evidence-based health literacy and nutrition education programming. Mixed-methods research aimed at quantifying the value of Extension volunteers at the personal, organizational, and community levels shows a promising direction for future research focused on Extension food volunteer programming (Harrington et al., 2021).

Finally, the various names adopted by Extension Master Food/Wellness programs may be creating confusion, and this inconsistency could dilute the MFV brand. Research centered on the core components of each program—and synthesis of the common aims and desired outcomes—could help clarify the differences between programs. Additionally, including the term "master" in the title of this model should be investigated as a potential barrier. Use of the term could contribute to a sense of intillectual elitism or conjure images of enslavement, both of which may dilute broader appeal. Lastly, this term may not lend itself to the necessary promotion of diversity, equity, and inclusion within Extension programming.

CONCLUSIONS

The United States is currently faced with a convergence of seemingly related epidemics: diet-related illnesses, a lack of nutrition literacy, nutrition insecurity, and systemic inequity in nutrition education. The COVID-19 pandemic has exacerbated these issues and made these challenges more pronounced (Moon et al., 2021; Himmelgreen et al., 2020). Recognizing the limited financial resources of the U.S. government to address these systemic inequities, our scoping review suggests that with further investigation and development, the MFV model could be effective in promoting health and wellbeing through diet and nutrition.

Studies show financial and logistical benefits to using the Extension infrastructure to promote activities related to health and wellbeing (Dwyer et al., 2017). Throughout the pandemic—and independent of direction from the administration—Extension agents have established online training modules to increase volunteer training opportunities and expand the demographic reach of such programs while minimizing the overall administrative burden (Buys, 2020). US Department of Agriculture Extension, with its century-old infrastructure, remains poised to meet 21st century challenges; however, as some researchers argue, it may need organizational updates and increased funding to do so (Beaulieu & Cordes, 2014). Between 1980 and 2010, federal funding for Extension decreased by more than 45%, diminishing the number of full-time equivalent employees from 17,000 to 13,300 and increasing states' shares of the funding burden (Wang, 2014). The integrated approach proposed here could be a cost-effective way to address this shortcoming, given that it is founded on pre-existing infrastructure at all levels of government.

The MFV program warrants additional piloting, refining, and evaluation to ensure proof of concept and program design, as do other proposals reimagining the coordination of nutrition research at the federal level (Fleischhacker et al., 2020). Implementing the MFV model through Extension could be an effective step toward increased health literacy and access to quality nutrition education—in a multitude of settings and for people at every stage of life.

REFERENCES

Arksey, H., & O'Malley, L. (2005). Scoping studies: Towards a methodological framework. *International Journal of Social Research Methodology*, *8*(1), 19–32. https://doi.org/10.1080/1364557032000119616

Bandura, A. (1989). Human agency in social cognitive theory. *The American Psychologist*, *44*(9), 1175–1184. https://doi.org/10.1037/0003-066X.44.9.1175

Bandura, A. (2004). Health Promotion by Social Cognitive Means. *Health Education & Behavior*, *31*(2), 143–164. https://doi.org/10.1177/1090198104263660

Beaulieu, L. J., & Cordes, S. (2014). Extension community development: Building strong, vibrant communities. *Journal of Extension*, *52*(5). https://archives.joe.org/joe/2014october/comm1.php

Bloom, D., Yao, J., & Edwards, H. (2021). Lessons learned from the development of the North Carolina Extension Master Food Volunteer program. *Journal of Extension*, *59*(3). https://doi.org/10.34068/joe.59.03.02

Buys, D. R. (2020, March 3). *Cooperative Extension as a public health partner in COVID-19 outreach*. JPHMP Direct. https://jphmpdirect.com/2020/03/30/cooperative-extension-as-a-public-health-partner-in-covid-19-outreach/

DeNunzio, M. N. (2022). *A feasibility assessment for the use of the community health worker model for inclusive garden-based food systems programming for Virginia Cooperative Extension* [Master's thesis, Virginia Polytechnic Institute and State University]. VTechWorks. http://hdl.handle.net/10919/110430

Dwyer, J. W., Contreras, D., Eschbach, C. L., Tiret, H., Newkirk, C., Carter, E., & Cronk, L. (2017). Cooperative Extension as a framework for health Extension: The Michigan State University model. *Academic Medicine*, *92*(10), 1416–1420. https://doi.org/10.1097/ACM.0000000000001640

Extension Committee on Organization and Policy Health Innovation Task Force. (2021, July). *Cooperative Extension's national framework for health equity and well-being*. Association of Public & Land-Grant Universities. http://www.aplu.org/CES-EqHealth https://www.aplu.org/wp-content/uploads/202120Equity Health20Full.pdf

Fleischhacker, S. E., Woteki, C. E., Coates, P. M., Hubbard, V. S., Flaherty, G. E., Glickman, D. R., Harkin, T. R., Kessler, D., Li, W. W., Loscalzo, J., Parekh, A., Rowe, S., Stover, P. J., Tagtow, A., Yun, A. J., & Mozaffarian, D. (2020). Strengthening national nutrition research: Rationale and options for a new coordinated federal research effort and authority. *The American Journal of Clinical Nutrition*, *112*(3), 721–769. https://doi.org/10.1093/ajcn/nqaa179

Harrington, R., Good, T., O'Neil, K., Grant, S., Maass, S., Vettern, R., & McGlaughlin, P. (2021). Value of assessing personal, organizational, and community impacts of Extension volunteer programs. *Journal of Extension*, *59*(2). https://doi.org/10.34068/joe.59.02.06

Himmelgreen, D., Romero-Daza, N., Heuer, J., Lucas, W., Salinas-Miranda, A. A., & Stoddard, T. (2020). Using syndemic theory to understand food insecurity and diet-related chronic diseases. *Social Science Medicine*, *295*, 113124. https://doi.org/10.1016/j.socscimed.2020.113124

Jiles, K. A., Chase, M., Hosig, K., Wenzel, S., Schlenker, E., & Rafie, C. (2019). Developing a Master Food Volunteer continuing education program: A model for volunteer capacity building. *Journal of Extension*, *57*(2). https://archives.joe.org/joe/2019april/rb10.php

K-State Research and Extension. (2020). *Master Food Volunteer Program*. https://www.ksre.k-state.edu/mfv/

Miles, V. (2018, August 20). Volunteer program looking for help to close the 'meal gap.' *ARLNow*. https://www.arlnow.com/2018/08/20/volunteer-program-looking-for-help-to-close-the-meal-gap/

Moon, J., Willingham, C., Gjevukaj, S., & Freudenberg, N. (2021). COVID-19, food insecurity, and diet-related diseases: Can syndemic theory inform effective responses? A case study. *Journal of Agriculture, Food Systems, and Community Development*, *10*(4), 55–71. https://doi.org/doi:10.5304/jafscd.2021.104.028

National Heart, Lung, and Blood Institute. (2021). *DASH eating plan*. https://www.nhlbi.nih.gov/health-topics/dash-eating-plan

National Institute of Food and Agriculture. (n.d.). *Cooperative Extension System*. Retrieved October 27, 2021, from https://nifa.usda.gov/cooperative-extension-system

Nickols, S. Y., Ralston, P. A., Anderson, C., Browne, L., Schroeder, G., Thomas, S., & Wild, P. (2009). The family and consumer sciences body of knowledge and the cultural kaleidoscope: Research opportunities and challenges. *Family and Consumer Sciences Research Journal*, *37*(3), 266–283. https://doi.org/10.1177/1077727X08329561

Peronto, M., & Yerxa, K. (2016). Eat Well Volunteers program takes feeding the hungry to a new level. *Journal of the NACAA*, *9*(1). https://www.nacaa.com/journal/b2b818cf-37c3-4c46-9be8-8fdab8826996

Portsmouth, Virginia. (2022, May 4). *Celebrating National Volunteer Month with Crystal Barber from VCE April 2022 Portsmouth Virginia* [Video]. YouTube. https://www.youtube.com/watch?v=TAaO5o__6gM

Powell, B. J., Waltz, T. J., Chinman, M. J., Damschroder, L. J., Smith, J. L., Matthieu, M. M., Proctor, E. K., & Kirchner, J. E. (2015). A refined compilation of implementation strategies: Results from the Expert Recommendations for Implementing Change (ERIC) project. *Implementation Science*, *10*(1), article 21. https://doi.org/10.1186/s13012-015-0209-1

Virginia Cooperative Extension. (n.d.). *Master Food Volunteer Program*. Retrieved January 31, 2022, from https://ext.vt.edu/food-health/master-food-volunteer.html

Wang, S. L. (2014). Cooperative Extension System: Trends and Economic Impacts on U.S. Agriculture. *CHOICES*, *29*(1). https://www.choicesmagazine.org/UserFiles/file/cmsarticle_355.pdf

Ware, R. L. (2020). *Examining the effectiveness of the Junior Master Wellness Volunteer Program on positive youth development outcomes* (Publication No. 28153167) [Doctoral dissertation, Mississippi State University]. ProQuest. https://www.proquest.com/openview/735e2bae0b171fffa57704f5249bc089/1?pq-origsite=gscholar&cbl=44156

Washburn, L. T., Traywick, L., Copeland, L., & Vincent, J. (2017). Extension Wellness Ambassadors: Individual effects of participation in a health-focused Master Volunteer program. *Journal of Extension*, *55*(2). https://archives.joe.org/joe/2017april/rb5.php